

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. 1005-188

HOYT et al

C# M#

Serial No. 10/046,535

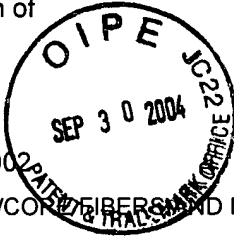
TC/A.U.: 1771

Filed: January 16, 2004

Examiner: Cheryl Ann Juska

Date: September 30, 2004

Title: DYED SHEATH/CONCENTRIC FIBERS AND METHODS OF MAKING SAME



**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the Examiner twice/finally rejecting (\$330.00) applicant's claim(s).

\$

☒ An appeal **BRIEF** is attached in triplicate in the pending appeal of the above-identified application (\$ 330.00)

\$ 330.00

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( )

☐ A reply brief is attached in triplicate under Rule 193(b)

(no fee)

☒ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s) (\$110.00/1 month; \$420.00/2 months; \$950.00/3 months; \$1480.00/4 months)

\$ 110.00

**SUBTOTAL** \$ 440.00

☐ Applicant claims "Small entity" status, enter 1/2 of subtotal and subtract

-\$ ( )

☐ "Small entity" statement attached.

**SUBTOTAL** \$ 440.00

Less month extension previously paid on

-\$ ( 0.00)

**TOTAL FEE ENCLOSED** \$ 440.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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Signature: 

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IFW AF/1771

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

HOYT et al

Atty. Ref.: 1005-188

Serial No. 10/046,535

Group: 1771

Filed: January 16, 2002

Examiner: Cheryl Ann Juska

For: DYED SHEATH/CORE FIBERS AND METHODS OF  
MAKING SAME

\* \* \* \* \*

10/01/2004 GWORDDF1 00000071 10046535

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330.00 OP

September 30, 2004

Honorable Commissioner of Patents  
and Trademarks  
Washington, DC 20231

APPLICANTS' BRIEF ON APPEAL

Sir:

This Appeal is from the Examiner's final rejection of claims 1, 2, 4 and 6-8, all of the claims presently pending herein.<sup>1</sup> As will become evident from the following discussion, the Examiner's rejections are in error and, as such, reversal of the same is solicited.

I. Real Party In Interest

The real party in interest is the owner of the subject application, namely Honeywell International Inc.

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<sup>1</sup> The claims on appeal appear in the Claims Appendix accompanying this Brief.

## II. Related Appeals and Interferences

For the Board's convenience, there is attached hereto as Exhibit A, a diagram showing the relationship between the present application, and the applications cited below, along with other related applications in this series.

A. The following related patent applications are presently on appeal:<sup>2</sup>

U.S. Application Serial No. 10/175,064 filed on June 20, 2002 (Attorney Docket No. 1005-192): Notice of Appeal filed on June 30, 2004.<sup>3</sup>

U.S. Application Serial No. 10/059,364 filed on January 31, 2002 (Attorney Docket No. 1005-189): Notice of Appeal filed on June 30, 2004.

B. The following patent applications are also presently on appeal and may likewise be deemed related to the appeal of the present application:

U.S. Application Serial No. 09/860,061 filed on May 17, 2001 (Attorney Docket No. 1005-196): Appeal Brief filed on September 20, 2004.

U.S. Application Serial No. 08/715,724 filed on September 19, 1996 (Attorney Docket No. 1005-166): Notice of Appeal filed on September 17, 2004.<sup>4</sup>

It is noted that the '724 and '061 applications are related as parent and child applications, respectively.

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<sup>2</sup> A Brief on appeal in each related application in Section II.A is being filed concurrently herewith.

<sup>3</sup> The now-abandoned parent of the '064 application, U.S. Application Serial No. 09/139,081 filed on August 24, 1998, was earlier appealed and includes in the record thereof a decision by the Board of Patent Appeals and Interferences (BPAI) dated October 8, 2003. Such prior decision in the abandoned parent '081 application is attached for consideration and listed in the Related Proceedings Appendix.

<sup>4</sup> Even though the '724 application is not directly related to the subject application, a prior decision by the BPAI issued therein during earlier prosecution is attached for possible consideration. Such prior decision is also listed in the Related Proceedings Appendix.

### III. Status of Claims

- A. The following claims are presently pending in this application and have been rejected in the Examiner's "final" Official Action of January 30, 2004: Claims 1, 2, 4 and 6-8.
- B. The following claims have been cancelled during prosecution to date: Claims 3, 5 and 9-20.
- C. The following claims have been allowed: None

### IV. Status of Amendments

No amendments have been filed subsequent to the Examiner's "final" rejection dated January 30, 2004.

### V. Summary of the Invention

The present invention is directed toward methods of making a stain-resistant sheath/core nylon filament having an essentially undyed nylon sheath and an acid-dyed nylon core. (Page 6, lines 16-27.) In this regard the nylon sheath/core filaments are formed from a nylon sheath polymer and a nylon core polymer which is surrounded entirely by the sheath polymer such that the filament contains less than about 10 wt.%, advantageously about 3 wt.%, of the sheath polymer. (Page 9, lines 1-11.) The nylon sheath polymer is resistant to, and thereby remains substantially undyed by, the acid dye in a dye bath in which the filament is immersed. (Page 6, lines 22-27.) Moreover, the nylon sheath polymer has an amine end group (AEG) content of less than about 10 meq/kg, advantageously less than about 5 meq/kg. (Page 11, lines 24-27 and original claim 5.) Most preferably, the filament cross-section is trilobal. (Page 12, lines 13-16 and Fig. 6.)

The nylon core polymer, on the other hand, is susceptible to dyeing by the acid dye in the dye bath. Particularly, the nylon core polymer has an AEG content of between about 10 meq/kg to about 100 meq/kg, advantageously between about 20 to about 50 meq/kg. (Page 10, lines 5-9.)

When the nylon sheath/core filament is brought into contact with the dye bath, the acid dye in the dye bath will physically diffuse or penetrate through the sheath to dye the core while the sheath remains substantially undyed. (Page 6, lines 22-27.)

## **VI. The References**

The following References have been cited and applied to reject claims 1, 2, 4 and 6-8 pending herein:

1. U.S. Patent No. 4,069,363 to Seagraves
2. U.S. Patent No. 5,447,794 to Lin
3. U.S. Patent No. 4,075,378 to Anton
4. U.S. Patent No. 5,468,555 to Lijten
5. U.S. Patent No. 5,340,886 to Hoyt

## **VII. Grounds of Rejection to be Reviewed on Appeal**

1. Claims 1, 4, and 6-8 stand rejected under 35 USC §103(a) as allegedly being unpatentable over Seagraves in view of Lin.
2. Claim 2 stand rejected under 35 USC §103(a) as allegedly being unpatentable over Seagraves in view of Anton or Lijten.
3. Claims 1, 2, 4 and 6-8 stand rejected under 35 USC §103(a) as allegedly being unpatentable over Anton in view of Lin.
4. Claims 1, 4 and 6-8 stand rejected under 35 USC §103(a) as allegedly being unpatentable over Lin in view of Hoyt and further in view of Seagraves.
5. Claim 2 stands rejected under 35 USC §103(a) as being unpatentable over Lin, Hoyt and Segraves, and in further view of Anton or Lijten.

## VIII. Arguments

What should not be lightly overlooked when reviewing the patentability of the present invention is that the applicants have discovered a method whereby **stain-resistant** sheath/core filaments may be provided which are nonetheless capable of being **acid dyed**. This is especially novel since many "stain" materials (e.g., C.I. Food Red 17) are themselves acid-dyes of sorts. The present invention therefore represents a real and non-trivial advance in the art since nylon fibers may be dyed by acid dyes contained in conventional acid dye baths, yet are nonetheless resistant to staining (e.g., by acid stain materials).

As is defined in pending independent claim 1, such novel attributes ensue by virtue of a nylon sheath/core filament formed of a nylon sheath polymer and a nylon core polymer which is surrounded entirely by the sheath polymer such that the filament contains less than about 10 wt.% of the sheath polymer. The nylon sheath polymer is resistant to, and thereby remains substantially undyed by, the acid dye in a dye bath and has an amine end group (AEG) content of less than about 10 meq/kg. The nylon core polymer, on the other hand, is susceptible to dyeing by the acid dye dyes in the dye bath and has an AEG content of between about 10 meq/kg to about 100 meq/kg. Thus, when the thus formed nylon sheath/core filament is brought into contact with the dye bath, the acid dye therein will physically diffuse or penetrate through the sheath to dye the core while the sheath remains substantially undyed.

None of the applied references of record discloses or even remotely suggests such a novel method as defined by applicants' pending claim 1 or the claims dependant therefrom.

### 1. **The combination of Seagraves in view of Lin does not render claims 1, 4, and 6-8 unobvious under 35 USC §103(a).**

The entire thrust of the Examiner's "obviousness" assertions seems to be that one of ordinary skill in this art would have "obviously" provided a sheath polymer with the herein claimed AEG content and in an amount of less than 10 wt% so that the core

can be acid-dyed, while the sheath remains substantially undyed. Applicants emphatically disagree.

For example, applicants emphatically disagree with the Examiner's assertion that the sheath polymer of Seagraves somehow inherently possesses the applicants' claimed AEG content and, even if it doesn't such an AEG content would have been obvious to an ordinarily skilled person. Seagraves is not concerned at all with providing an anti-staining sheath/core filament, but instead is concerned with an asymmetrical sheath/core filament which improves its "crimpability". At column 4, lines 16-23, Seagraves suggests that some differential dyeing is possible as between the sheath and the core, but such differential dyeing is attributed to the differences between the nylon 6-12/6 nylon copolymeric core, and the homopolymeric nylon sheath. Hence, based on Seagraves, one of ordinary skill in this art would not be lead to the presently claimed sheath/core filaments whereby the sheath and core polymers have the claimed AEG contents and/or the sheath is present in an amount of less than about 10wt.%. Certainly, Seagraves' disclosure of the sheath therefore being "lighter" in color as compared to the core cannot in any way be suggestive of an essentially **undyed** sheath.

Lin simply discloses that sheath/core filaments may be formed of a nylon 6,12 polymer sheath and a nylon 6,6 polymer core. Example 2 of Lin discloses that the nylon 6,6 polymer has an AEG content of 50 meq/kg, but no disclosure or suggestion as to the AEG content of the sheath polymer is provided. Moreover, Lin does not suggest at all that the therein disclosed sheath/core filament may be acid-dyed such that the core is dyed by an acid dye in a dye bath by migrating physically through the sheath (i.e., so the sheath remains substantially undyed). What Lin does disclose therefore, is that (i) the sheath polymer is nylon 6,12, (ii) the core polymer is nylon 6,6, and (iii) the only amino end group content of *any* polymer employed is 50 meq/kg.

Thus, even if Lin were to be combined with Seagraves, the present invention would not result. That is, such a combination would not be suggestive of a method whereby a **stain-resistant nylon** sheath/core filament may be made having an essentially undyed **nylon** sheath and an **acid-dyed** nylon core.

**2. The combination of Seagraves in view of Anton or Lijten does not render claim 2 unpatentable under 35 USC §103(a).**

The inappropriateness of Seagraves vis-à-vis the presently claimed invention as defined in claims 1, 4 and 6-8 has already been discussed above and is thereby incorporated herein by reference. Claim 2 pending herein, of course, further limits the filament of claim 1 in the form of a trilobal filament.

Applicants are not claiming to be the first inventors of dyeing trilobal filaments per se. Instead applicants are claiming to be the first inventors of dyeing the *specifi* trilobal filaments as recited in claim 1. Neither Anton nor Lijten cure the deficiencies of Seagraves as noted above.

In this regard, both Anton and Lijten are apparently being used by the Examiner to support her assertion that trilobal filaments are known generally. Applicants do not dispute this. Applicants, however, vigorously dispute that Anton or Lijten somehow cures the deficiencies of Seagraves. They do not.

Applicants note that Anton actually leads someone skilled in this art *away from* the presently claimed invention since the AEG content of the sheath polymer is between 15-40 meq/kg. Perhaps more importantly, Anton discloses that such a sheath polymer having the AEG content stated is important to ensure its dyeability by *basic* dyes. Thus, the suggestion provided by Anton is that such differences in the AEG contents between the sheath and core polymers is necessary so as to ensure cross-dyeability. Such disclosure would not, applicants submit, be suggestive at all of a sheath/core filament having the attributes of the present invention whereby a *stain-resistant nylon* sheath/core filament may be made having an essentially undyed *nylon* sheath and an *acid-dyed* nylon core.

Lijten is suggested to be even less pertinent to the present invention as compared to the references discussed above. All that Lijten can arguable be said to disclose that is pertinent to the present invention is that trilobal filaments are known generally which, as noted previously, is not disputed at all by the Applicants. Lijten



therefore fails to cure the deficiencies of the applied references discussed above.

**3. The combination of Anton in view of Lin does not render claims 1, 2, 4 and 6-8 unpatentable under 35 USC §103(a).**

Anton and Lin have been discussed previously and thus such discussion is incorporated by reference here. Their combination does not render obvious claims 1, 2, 4 and 6-8 under 35 USC §103(a).

To summarize, Anton actually leads someone skilled in this art *away from* the presently claimed invention. Specifically, Anton discloses that the AEG content of the sheath polymer is between 15-40 meq/kg – **not** less than 10 meq/kg as defined in independent claim 1. Moreover, Anton discloses that such a sheath polymer having the AEG content stated is important to ensure its dyeability by **basic** dyes.

Lin simply discloses that sheath/core filaments may be formed of a nylon 6,12 polymer sheath and a nylon 6,6 polymer core. Example 2 of Lin discloses that the nylon 6,6 polymer has an AEG content of 50 meq/kg, but no disclosure or suggestion as to the AEG content of the sheath polymer is provided.

Hence, the combination of Anton and Lin would not lead an ordinarily skilled person toward the invention defined by the present applicants' claims 1, 2, 4 and 6-8.

**4. The combination of Lin in view of Hoyt and further in view of Seagraves does not render claims 1, 4 and 6-8 unpatentable under 35 USC §103(a).**

Hoyt et al is apparently being employed in combination with Lin and Seagraves for the proposition that one of ordinary skill in this art would “obviously” substitute the polymer disclosed therein for the sheath polymer of Lin. However, as noted above, Lin is completely silent regarding the AEG content of its sheath polymer. Hence, there is no suggestion at all for any skilled person to go searching for another sheath polymer in view of the Lin disclosure since (a) Lin does not ascribe any significance to the AEG content of either the sheath and/or core polymer vis-à-vis stain resistance, and (b) Hoyt et al discloses a *sulphonated* nylon polymer is necessary in order to fulfill the stain-

resistance results. Hence, an ordinarily skilled person would not be guided to select any specific nylon polymer, let alone a polymer having an AEG content as disclosed in Hoyt.

Seagraves adds little, if anything, to the combination. All that Seagraves has recognized is that, under "certain conditions", a **blend** of nylon 6-12/6 polymer accepts dyes readily while a nylon 6-12 polymer sheath does not. No suggestion or contemplation exists in Seagraves of a sheath polymer having the attributes of the presently claimed invention.

**5. The combination of Lin, Hoyt and Seagraves, and further in view of Anton or Lijten does not render claim 2 unpatentable under 35 USC §103(a).**

The comments immediately above in paragraph VIII.4 are equally germane to the Examiner's rejection of claim 2 based on the combination of Lin, Hoyt and Seagraves, and further in view of Anton or Lijten. Again, the Examiner is apparently using the Anton and Lijten references in this rejection merely for their teaching of "trilobal" filaments. As has been discussed already at length, applicants readily acknowledge that trilobal filaments generally are known. What is disputed here is that Lin, Hoyt and Seagraves somehow, when combined, render "obvious" the present invention under 35 USC §103(a). As has already been demonstrated, they do not. As such, the further combination of Anton or Lijten does not cure the deficiencies of Lin, Hoyt and Seagraves.

**IX. Conclusions**

To reiterate, applicants have discovered a method whereby **stain-resistant** sheath/core filaments may be provided which are nonetheless capable of being **acid dyed**. This is especially novel and unobvious since many "stain" materials (e.g., C.I. Food Red 17) are themselves acid-dyes of sorts. The present invention therefore represents a real and non-trivial advance in the art since the nylon sheath/core fibers may be dyed by acid dyes contained in conventional acid dye baths, yet are nonetheless resistant to staining (e.g., by acid stain materials).

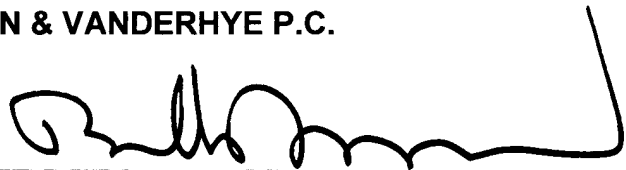
While the art of record evidences a recognition generally of sheath/core nylon fibers, and the desirability of stain-resistant nylon fibers, none of the applied references of record, either individually or collectively disclose or suggest a method whereby a nylon sheath/core filament formed of a nylon sheath polymer and a nylon core polymer which is surrounded entirely by the sheath polymer such that the filament contains less than about 10 wt.% of the sheath polymer may be subjected to an acid dye in a dye bath such that the acid dye in the dye bath will physically diffuse or penetrate through the sheath to dye the core while the sheath remains substantially undyed (i.e., by virtue of the nylon sheath polymer being resistant to the dye, and the nylon core polymer being susceptible to the dye).

For the reasons advanced, the Examiner's rejections of record are in error and must be reversed. Such favorable action is solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

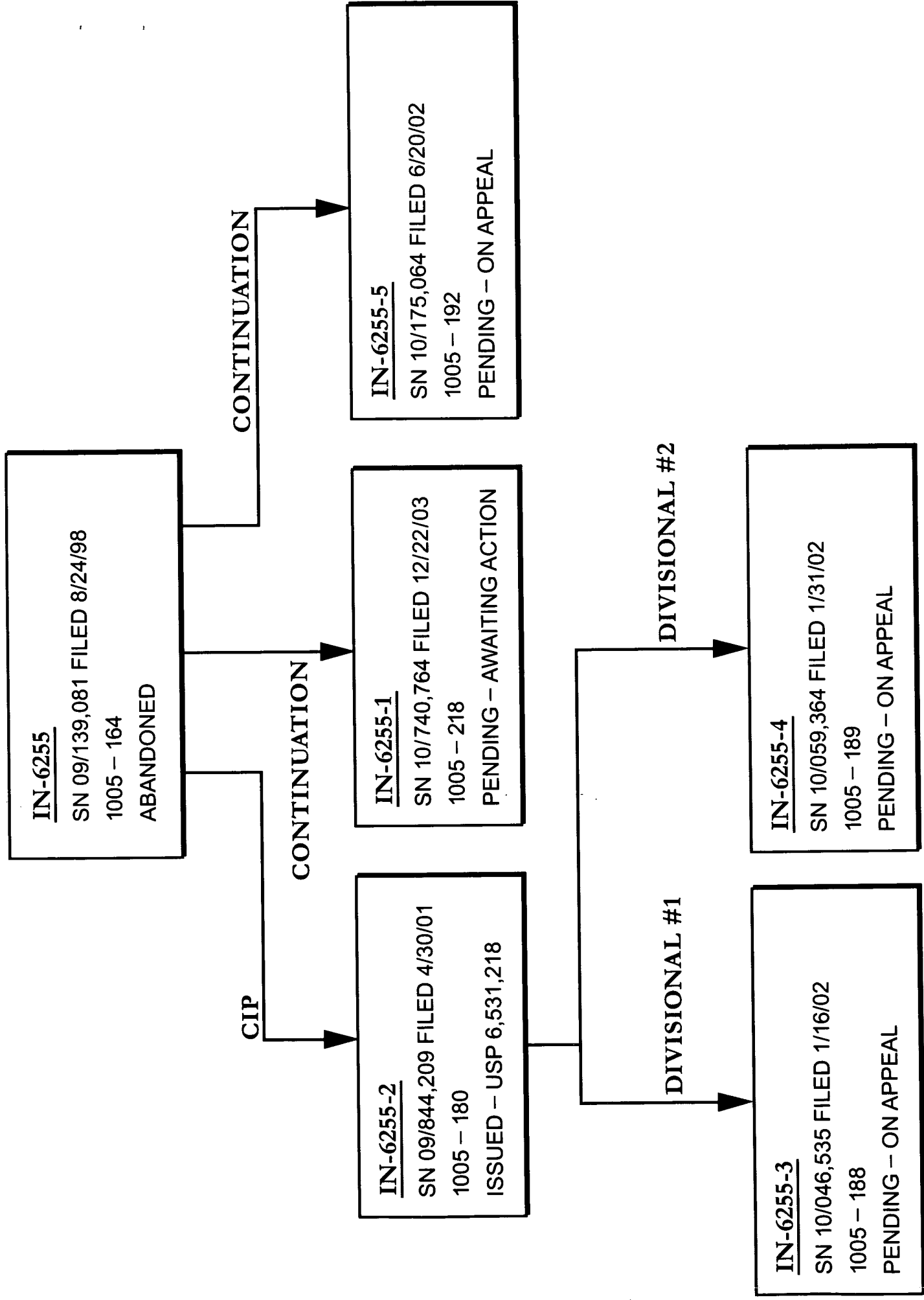
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# IN-6255 SERIES



**CLAIMS APPENDIX**

**Appealed Claims – USSN 10/046,535**

1. (Previously Presented) A method of making a stain-resistant sheath/core nylon filament having an essentially undyed nylon sheath and an acid-dyed nylon core, said method comprising the steps of:

- (a) providing a dye bath containing an acid dye;
- (b) forming a nylon sheath/core filament from a nylon sheath polymer and a nylon core polymer which is surrounded entirely by the sheath polymer such that the filament contains less than about 10 wt.% of the sheath polymer, wherein the nylon sheath polymer is resistant to, and thereby remains substantially undyed by, the acid dye in the dye bath and has an amine end group (AEG) content of less than about 10 meq/kg, and wherein the nylon core polymer is susceptible to dyeing by the acid dye in the dye bath and has an AEG content of between about 10 meq/kg to about 100 meq/kg;
- (c) bringing the nylon sheath/core filament formed in step (b) into contact with the dye bath; and
- (d) allowing the acid dye in the dye bath to physically diffuse or penetrate through the sheath to dye the core while the sheath remains substantially undyed.

2. (Previously Presented) The method of claim 1, wherein step (b) is practiced to form a trilobal filament

3. (Canceled)

4. (Previously Presented) The method of claim 1, wherein step (b) is practiced such that the filament contains between about 90 wt.% to about 97 wt.% of the core polymer, and between about 3 wt.% to about 10 wt.% of the sheath polymer.

5. (Canceled)

6. (Previously Presented) The method of claim 1, wherein the nylon sheath polymer has an AEG content of less than about 5 meq/kg.

7. (Original) The method of claim 6, wherein the nylon sheath polymer is a nylon-6,12 homopolymer.

8. (Previously Presented) The method of claim 1 or 6, wherein the nylon core polymer is at least one nylon selected from the group consisting of nylon-6, nylon-12, nylon-11, nylon-6/6, nylon-6/10 and copolymers and blends thereof.

9-20. (Canceled)

**RELATED PROCEEDINGS APPENDIX**

Attached Copies of Decisions Rendered by Court of Board of Patent  
Appeals and Interferences (BPAI)

<b><u>Tab No.</u></b>	<b><u>Description</u></b>
A	BPAI Decision dated October 27, 2003 in U.S. Application Serial No. 09/139,081 (Attorney Dkt. No. 1005-164)
B	BPAI Decision dated November 21, 2002 in U.S. Application Serial No. 08/715,724 (Attorney Dkt. No. 1005-166)

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

COPY

*Ex parte* MATTHEW B. HOYT, BOBBY J. BAILEY,  
STANLEY A. MCINTOSH,  
PHILLIP E. WILSON and GARY W. SHORE

MAILED

OCT 27 2003

U.S. PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Appeal No. 2003-0580  
Application No. 09/139,081

HEARD: October 8, 2003

Before PAK, OWENS, and LIEBERMAN, *Administrative Patent Judges*  
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from a nonfinal rejection of claims 41-52, which are all of the claims pending in the application.<sup>1</sup>

THE INVENTION

The appellants claim a carpet comprising acid-dyed sheath/core nylon fibers which are resistant to ozone fading.

<sup>1</sup> In an appeal in which claims have been at least twice rejected, the board has jurisdiction as discussed in *Ex parte Lemoine*, 46 USPQ2d 1432 (Bd. Pat. App. & Int. 1995).



Claim 41 is illustrative:

41. An ozone fade resistant dyed carpet comprising:  
a backing material; and  
dyed sheath/core face fibers affixed to said backing material and bound thereto, said face fibers having (i) at least about 70 wt.% of a core formed of at least one fiber-forming core nylon selected from the group consisting of nylon-6, nylon 6,6 and copolymers and blends thereof, and (ii) a sheath substantially or completely covering said core formed of a fiber-forming sheath nylon selected from nylon 6,12 and copolymers thereof which exhibit inherent chemical compatibility with the core nylon and which is acid dye resistant, wherein

said dyed sheath/core face fibers are dyed with an acid dye and have a resistance to ozone fading indicated by a CIE L\*a\*b\* total color difference from the original unexposed dyed sheath/core face fibers after at least 3 cycles of ozone fading that is less than one-half of the CIE L\*a\*b\* total color difference seen for a fiber composed substantially completely of said core nylon that is dyed with the same acid dye.

#### THE REFERENCES

Ida et al. (Ida '901)	3,918,901	Nov. 11, 1975
Ida et al. (Ida '973)	3,927,973	Dec. 23, 1975
Chambers et al. (Chambers)	4,762,524	Aug. 09, 1988
Jenkins	5,085,667	Feb. 04, 1992
Lin	5,447,794	Sep. 05, 1995

(filed Sep. 07, 1994)

*THE REJECTION*

Claims 41-52 stand rejected under 35 U.S.C. § 103 as being unpatentable over Lin in view of Jenkins, Chambers, Ida '973 and Ida '901.

*OPINION*

We affirm the aforementioned rejection.

The appellants state that the claims stand or fall together (brief,<sup>2</sup> page 4). We therefore limit our discussion to one claim, i.e., claim 41. See *In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c) (7) (1997).

Lin discloses textile articles, especially carpets, comprising polyamide sheath-core filaments wherein the sheath is comprised of a polyamide which is resistant to staining by acid dyes (col. 1, lines 7-11). An exemplified filament has a nylon 66 core and a nylon 6,12 sheath, the sheath to core ratio being 1:9 (col. 5, lines 6-8 and 27). Pigments can be incorporated into the sheath and/or core polymer (col. 3, lines 20-24). Lin does not disclose dyeing the filaments.

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<sup>2</sup> Citations herein are to the supplemental brief filed July 16, 2002 (paper no. 21).

Jenkins discloses a method for "improving the stain resistance, lightfastness and ozone resistance of nylon, especially nylon carpet" (col. 1, lines 11-13). Jenkins teaches that "[c]ationic dyeable nylons contain  $\text{SO}_3\text{H}$  groups or  $\text{COOH}$  groups within the polymer structure in an amount sufficient to render the nylon fiber dyeable with a cationic dye which groups are receptive to cationic or basic dyes" (col. 1, lines 24-28) and that "[c]ationic dyeable nylons generally exhibit inherent stain resistant properties, especially to acid-type stains" (col. 1, lines 34 and 51-52). Jenkins dyes cationic dyeable nylon fibers with acid dyes or premetalized acid dyes at a pH of about 4.0 to 6.5, fixes the dyes to the fibers, and produces, from the fibers, carpet having improved stain and ozone resistance and lightfastness properties (col. 1, lines 11-13 and 62-65; col. 12, lines 7-10). Two of Jenkins' dyes (Acid Blue 277 and Acid Red 361, col. 6, lines 14 and 18) are among the appellants' acid dyes (specification, page 16, lines 4-5).

Jenkins does not disclose that nylon 6,12 is cationic dyeable. However, Jenkins teaches that "[a]n affinity for cationic dyes is usually imparted by the incorporation of a

monomer containing sulfonic acid groups. Thus one such modification of a polyamide fiber is obtained by adding a certain amount of sulphoisophthalic acid prior to polymerization" (col. 2, lines 50-54).<sup>3</sup> Jenkins, therefore, would have fairly suggested, to one of ordinary skill in the art, incorporating a monomer containing sulfonic acid groups into Lin's nylon 6,12 sheath polymer to render the nylon 6,12 cationic dyeable, and dyeing the nylon 6,12 sheath with one of Jenkins' acid dyes such as Acid Blue 277 or Acid Red 361, to produce a dyed sheath having the desirable properties disclosed by Jenkins, i.e., improved stain resistance and fastness properties.<sup>4</sup> Consequently, the appellants' claimed carpet would have been prima facie obvious to one of ordinary skill in the art.

The appellants argue that "reviewing Jenkins would lead one of ordinary skill in this art to expect that fibers formed entirely of the therein disclosed polymeric materials would be necessary in order to achieve the properties of lightfastness and depth of shade" (brief, page 7). This argument is not well taken

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<sup>3</sup> The appellants' sheath polymer may a sulfonated polyamide (specification, page 10, lines 11-12).

<sup>4</sup> There is no dispute as to whether the dyed fibers would have the ozone fading resistance recited in the appellants' claim 41.

because Jenkins' disclosure pertains to acid dyeing nylons in general which have been rendered cationic dyeable. The disclosure is not limited to the exemplified nylons. See *In re Fracalossi*, 681 F.2d 792, 794 n.1, 215 USPQ 569, 570 n.1 (CCPA 1982); *In re Mills*, 470 F.2d 649, 651, 176 USPQ 196, 198 (CCPA 1972).

The appellants argue that because Lin teaches that his sheath is resistant to staining by acid dyes, one of ordinary skill in the art would not have expected the sheath to be stainable by Jenkins' acid dyes (brief, page 8). The acid dyes to which Lin's sheath is stain resistant are not the types of dyes used to dye carpet fibers but, rather, are the acid dyes in Kool-Aid® (col. 3, line 36). Jenkins' cationic dyeable nylons also are resistant to Kool-Aid® stains (col. 7, lines 36-37). Hence, Jenkins would have indicated to one of ordinary skill in the art that Lin's sheath is dyeable with Jenkins' acid dyes to produce a dyed sheath which is resistant to Kool-Aid® stains.

The appellants argue that Lin's disclosure that the fibers can be pigmented teaches away from dyeing the fibers (brief, page 8). Lin merely teaches that pigments are an optional

Appeal No. 2003-0580  
Application No. 09/139,081

additive to the core and/or sheath polymers (col. 3, lines 20-24). This disclosure in no way indicates that the polymers are not acid dyeable.

The appellants argue that the Wilson declaration (filed September 24, 2001, paper no. 15) shows that the claimed invention satisfies a long felt but unsolved need for the most desired characteristics of a carpet fiber (brief, pages 9-12). For the following reasons, this declaration is not effective for overcoming the prima facie case of obviousness of the appellants' claimed invention.

First, Wilson does not show that there was a particular long felt need but, rather, merely indicates that the attendees at town hall meetings would like better carpet fibers. Wilson states that BASF's town hall meetings resulted in "a list of long felt, but at that time unresolved, industry needs for the most desired characteristics of the ultimate carpet fiber. These needs included stain resistance, dyeability to provide color flexibility at the mill and improved ozone fastness, among other things" (page 2).

Second, Wilson does not establish, such as by providing evidence from carpet users, that the claimed invention solves any need. Wilson merely submits articles by trade journal publishers who are in a position to receive advertising revenue from companies whose products they discuss and who, therefore, cannot reasonably be considered impartial. Not surprisingly, the articles praise the products made by BASF (the appellants' assignee) and every other company mentioned in the articles. Moreover, the articles clearly do not establish that the appellants have solved the need for stain resistant, ozone fade resistant carpet fibers such that no further improvement in carpet fiber stain resistance and ozone fastness is needed.

Third, Wilson does not establish that the stain resistance and ozone fastness which the articles attribute to the Savant<sup>®</sup> fibers are due to the characteristics set forth in the appellants' claims.

For the above reasons we conclude that a prima facie case of obviousness of the appellants' claimed invention has been established and has not been effectively rebutted by the appellants.<sup>5</sup>

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<sup>5</sup> A discussion of Chambers, Ida '973 and Ida '901 is not necessary to our decision.

Appeal No. 2003-0580  
Application No. 09/139,081

### DECISION

The rejection of claims 41-52 under 35 U.S.C. § 103 over Lin in view of Jenkins, Chambers, Ida '973 and Ida '901 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

*AFFIRMED*

  
CHUNG K. PAK

CHUNG K. PAK  
Administrative Patent Judge

Terry J. Owens  
TERRY J. OWENS

Administrative Patent Judge

  
PAUL LIEBERMAN

PAUL LIEBERMAN  
Administrative Patent Judge

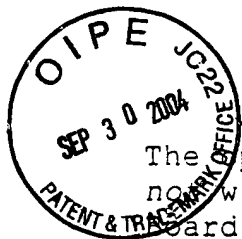
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tjo/vsh



Appeal No. 2003-0580  
Application No. 09/139,081

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The opinion in support of the decision being entered today was  
not written for publication and is not binding precedent of the  
Board.

Paper No. 28

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

*Ex parte* PHILLIP E. WILSON, STANLEY A. MCINTOSH  
AND MATTHEW B. HOYT

Appeal No. 2001-2386  
Application 08/715,724

ON BRIEF

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PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Before PAK, OWENS and LIEBERMAN, *Administrative Patent Judges.*

OWENS, *Administrative Patent Judge.*

*DECISION ON APPEAL*

This appeal is from the refusal to allow claims 2-4, 9, 10, 14, 15, 17, 20 and 21, which are all of the claims remaining in the application.

*THE INVENTION*

The appellants claim an acid-dye and coffee stain resistant carpet having fibers made of a polyamide core substantially or completely covered by a sheath of a specified polyamide.

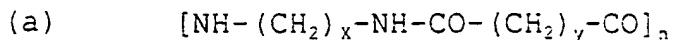
Claims 20 and 2 are illustrative:

20. An acid-dye and coffee stain resistant carpet comprising:

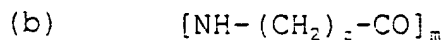
a backing material; and

stain resistant sheath/core bicomponent face fibers with non-round cross-sections affixed in said backing material and bound thereto;

said face fibers comprising: a core of a first polyamide component; and a sheath occupying from about 3 to 9 percent of the fiber and substantially or completely covering said core, said sheath comprising a second polyamide component which is inherently chemically compatible with said first polyamide component, said second polyamide component comprising at least one stain resistant polyamide polymer selected from the group consisting of:



where x and y may be the same or different integers from about 4 to about 30, the sum of x and y is greater than 13, and n is greater than about 40; and



where z is an integer from about 9 to about 30 and m is greater than about 40;

(c) derivatives of (a) or (b) including polymers substituted with one or more sulfonate, halogenate, aliphatic or aromatic functionality; and

(d) copolymers and blends of (a), (b) and (c);

wherein said fiber has a percent steam heatsetting shrinkage value which is about 70% or less of a percent steam heatsetting shrinkage value of an otherwise identical fiber consisting of only said first polyamide component; and

said carpet in an uncolored state having a red drink staining depth of less than 15 CIE  $\Delta E$  units and a coffee staining depth of less than about 10 CIE  $\Delta E$  units.<sup>(1)</sup>

2. The carpet of claim 20, wherein said inherently compatible polyamide component has a concentration of titratable amino end-groups less than 30 milliequivalents per kilogram.

#### THE REFERENCES

Lin	5,447,794	Sep. 5, 1995
Lijten et al. (Lijten)	5,468,555	Nov. 21, 1995

#### THE REJECTION

Claims 2-4, 9, 10, 14, 15, 17, 20 and 21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Lin in view of Lijten.

#### OPINION

The aforementioned rejection is affirmed as to claims 4, 14, 15, 17, 20 and 21, and reversed as to claims 2, 3, 9 and 10.

The appellants state that the claims stand or fall in two groups: 1) claims 4, 14, 15, 17, 20 and 21, and 2) claims 2 and 3

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<sup>1</sup> The examiner and the appellants should address whether the appellants' disclosure of percent sheath upper limits of about 15 wt%, about 30 wt% and about 90 wt% (specification, page 8, line 17 - page 9, line 2) provides adequate written descriptive support for the upper limit of about 9 percent recited in the appellants' claim 20.

(brief, page 5).<sup>2</sup> The rejection is affirmed only as to the claims in the first group. We limit our discussion of the rejection of the claims in the first group to one claim, i.e., claim 20. See *In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7) (1997).

*Rejection of claim 20*

Lin discloses an acid-dye and coffee stain resistant carpet (col. 1, lines 7-10; col. 2, lines 52-56; col. 6, lines 20-22) comprising a backing material tufted with stain resistant sheath/core bicomponent face fibers (col. 1, lines 7-9; col. 2, lines 54-56). The weight ratio of the sheath to the core can be 10:90 (col. 1, lines 41-42). Hence, the fiber can be 10 wt% sheath, which either falls within the about 9% recited in the appellants' claim 20 or is sufficiently close to about 9% that it would have fairly suggested, to one of ordinary skill in the art, that amount of sheath. See *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). The face fibers comprise a core of a first polyamide component which can be nylon 6 or nylon 6,6 (col. 1, lines 39-40), which are the

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<sup>2</sup> Claim 9, which depends from claim 3, and claim 10, which depends from claim 9, and which are omitted from the appellants' grouping of claims, are considered to stand or fall with the claims in the second group.

appellants' most preferred core polyamides (specification, page 9, lines 19-20), covered by a sheath which can be nylon 6,12 (col. 1, lines 43-47), which is the appellants' most preferred sheath polyamide (specification, page 11, line 17). Because Lin's nylon 6, nylon 6,6 and nylon 6,12 are the same polyamides as those of the appellants, they necessarily have the compatibility, percent steam heatsetting shrinkage and staining depth recited in the appellants' claim 20. "Products of identical chemical composition can not have mutually exclusive properties." *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Lin states that the fibers can be substantially eccentric (col. 2, lines 14-19), which indicates that they can be non-round. Moreover, Lijten teaches that carpet fibers having a trilobal cross-section, which is the appellants' preferred fiber cross-section (specification, page 14, line 10), are preferred due to their visual effect and properties such as adhesivity (col. 3, lines 16-21). Although round fibers are used in Lin's examples (col. 5, line 21), the reference does not limit the fiber cross-section to one which is round. Hence, one of ordinary skill in the art would have been led by Lijten to use trilobal cross-section fibers in Lin's carpet to obtain the

benefits of trilobal cross-section fibers disclosed by Lijten.

We therefore conclude that the carpet recited in the appellants' claim 20 would have been *prima facie* obvious to one of ordinary skill in the art over the applied prior art.

The appellants argue that the improved dyeability provided by Lijten's sheath (col. 4, lines 12-13) is diametrically opposed to the objective of Lin (brief, page 9). Lijten's disclosure, however, of the benefits of trilobal fibers in carpet (col. 3, lines 16-21), is applicable to trilobal fibers generally, regardless of whether a sheath on the fibers is dyeable or dye resistant.

The appellants argue that the claimed carpet provides surprising results with respect to heatset shrinkage and stain resistance (brief, pages 11-12). This argument is not well taken because the appellants have not provided a side-by-side comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims, and explained why the results would have been unexpected by one of ordinary skill in the art. See *In re Baxter Travenol Labs.*, 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983); *In re*

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*Clemens*, 622 F.2d 1029, 1035, 206 USPQ 289, 296 (CCPA 1980); *In re Freeman*, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973); *In re Klosak*, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972).

For the above reasons we conclude that the carpet claimed in the appellants' claim 20 would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103.

*Rejection of claims 2, 3, 9 and 10*

The examiner argues that because Lin's nylon 6, nylon 6,6 and nylon 6,12 are the same as those used by the appellants, the fibers of Lin and the appellants inherently have the same number of titratable amino end groups, i.e., less than 30 milliequivalents per kilogram (answer, page 8). Lin's example 2, wherein the core is nylon 6,6, the sheath is nylon 6,12, and the concentration of titratable amino end groups is about 50 milliequivalents per kilogram (col. 5, lines 6-8 and 14-15), indicates that the examiner is incorrect. The appellants obtain their level of titratable amino end groups by reacting amino end groups with blocking agents (specification, page 11, line 18 - page 13, line 15). The examiner has not established that the applied prior art discloses, or would have fairly suggested to one of ordinary skill in the art, providing a sheath having less than 30 milliequivalents per kilogram of titratable amino end



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groups either by blocking amino end groups or by another method. The examiner, therefore, has not carried the burden of establishing a *prima facie* case of obviousness of the carpet recited in the appellants' claim 2 and claims 3, 9 and 10 which depend directly or indirectly therefrom.

#### DECISION

The rejection of claims 2-4, 9, 10, 14, 15, 17, 20 and 21 stand rejected under 35 U.S.C. § 103 over Lin in view of Lijten is affirmed as to claims 4, 14, 15, 17, 20 and 21, and reversed as to claims 2, 3, 9 and 10.

Appeal No. 2001-2386  
Application 08/715,724

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

  
CHUNG K. PAK  
Administrative Patent Judge

*Terry J. Owens*  
TERRY J. OWENS  
Administrative Patent Judge

  
PAUL LIEBERMAN  
Administrative Patent Judge

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